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ABSTRACT

This study examined the effect of goal-setting on the achievement and attitudes of 108 boys and girls from grades 1-4. Pupils in Group I participated in four goal-setting conferences with the experimenter. Pupils in Group II also had conferences but class study topics were discussed and students did not set goals. Group III was a control group receiving only classroom instruction in reading skills. Two attitude measures were administered to all pupils along with an experimenter-developed and a criterion-referenced achievement test. The experimental design was a 3x3x2 randomized block design with three treatments, three levels of previous achievement, and two sexes. Findings indicate that the use of an individual goal-setting conference can improve the classroom motivation of pupils. The confounding of other factors makes present findings tentative. Suggestions for future research include beginning with a more precise delineation of the attributes of goal-setting. (WY)

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The Use of Individual Goal-Setting Conferences as a Motivational Technique

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Although experimental evidence relating to goal-setting, and to a lesser extent motivation in general, has traditionally been obtained in laboratory settings employing tsks not typically found in the classroom, increasing emphasis is being placed on exploring and defining procedures for academic motivation. Recent studies at the Wisconsin Research and Development Center for Cognitive Learning (Kennedy, 1968; Klausmeier, Quilling, and Wardrop, 1968; Lamal, 1969; Schevenn, Sorenson and Bavry, 1970) have identified motivational techniques which may be used in classroom settings, and have contributed to the development and validation of a system of individually guided motivation (Klausmeier, Schwenn and Lamal 1970). The present studies were conducted in conjunction with the center and were designed to investigate the effect of goal-setting on attitudes and achievement and to further elineate the attributes of goal-setting. The procedures investigated in this study might well be integrated into the motivation system as a means for allowing students to set and attain goals and as a situation in which feedback may easily be provided.

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There can be no doubt that the setting of performance goals is a potent variable. For example, Armstrong (1947), Lockette (1956), Kausler (1969), and Fryer (1964) have conducted research relating goal-setting performance. Each investigator employed a different experimental task and age group, yet the same general conclusion was reached in each case: subjects who predict future performance scores and set goals attain a higher level of performance than that

attained by those who do not set performance goals.

Traditionally, knowledge of results and goal setting have been viewed as related but essentially separate processes. Several recent studies have indicated, however, that the primary use of knowledge of results may be in its use in shaping a student's intentions in terms of performance. Locke, in a pair of studies (Locke & Bryan, 1966b; Locke, 1967) obtained results indicating that automatic improvement in performance is not obtained by giving a subject knowledge of his total score, but rather, is dependent upon how the knowledge of results is employed in setting future goals. The emphasis is placed on the role that knowledge of results plays in goal setting rather than on any intrinsic value of supplying knowledge of results. On this basis, knowledge of results is not treated as a separate independent variable in this study, but rather is treated as a component part of the goal-setting process itself.

In developing the goal-setting procedure used in the study, three other important questions were considered: student- versus teacher-set goals, goal specificity, and goal difficulty. Studies (Bayton, 1948; Locke, 1966a) have indicated that student-set goals are superior to teacher-set goals. However, in an ongoing classroom situation the student may not be able to set appropriate goals because he is not acquainted with the subject matter to be studied. Because of this, appropriate goals were listed for the students and they then chose their own goals from the listing.

Classroom goals have usually been framed in terms of a "do your best" type of statement by the teacher without specifying performance objectives. However, several studies (Bayton, 1948; Locke & Bryan, 1966a, 1967b) have indicated that specific performance goals provide for better learning than do "do your best" goals. Therefore, the goal-setting procedure used in the study insured that the goals set related to specific performance objectives.

Experimental evidence indicates that the difficulty level of goals can play an important role in goal setting. Locke (1966a) has shown that goals must be relatively difficult in order for the goal-setting process to be effective. This would seem to indicate that although goals should be student-set, there should be some feedback concerning appropriate difficulty level.

Method

Treatment and Groups

In developing the goal-setting procedure to be used in the study the factors discussed above were taken into account. Goal-setting subjects met once a week with the experimenter. During this session, feedback was provided on the appropriateness of the previous week's goals in terms of their achievement of goals for the week as rated by the classroom teacher. Following a brief discussion of the material to be studied during the coming week the students were asked to set performance goals. A range of possible goals was presented to each student in the form of a goal-setting check list. This check list was developed in conjunction with the classroom teachers and was based on their estimation of the types of behaviors which would be indicative of a growing mastery of a specific reading skill being taught. By presenting the goals in this manner they were student-set in the sense that they were "student chosen," while at the same time were both specific and appropriate to the reading skill. Students in the goal-setting treatment group received four such conferences during the study.

Schwenn, Sorenson, and Bavry (1970) demonstrated a positive effect of individual reading conferences on the amount of independent reading of elementary school children. In the present study, this type of social interaction is present as an implicit part of the goal-setting conferences. This would present

a problem in interpreting positive results since it would be unclear whether the treatment effect was due to the goal-setting procedures or simply the result of the individual conference per se. To allow for a clearer interpretation of the data and to judge the effect of the conference alone in this type of procedure, a second treatment group was established. The conference group received individual conferences with the experimenter on the same schedule as the goal-setting treatment group. The conferences differed, however, in that students did not set specific performance goals. During the conference the topics which would be studies in class were briefly discussed and general class goals were pointed out by the experimenter.

The third group in the study was a control group. This group received the same classroom instruction as the other two groups, but received no conferences of any kind.

Subjects

Subjects were students in Units B and D of an elementary school which is organized following the Multi-Unit concept. Students in Unit D would normally be in the third and fourth grades, while students in Unit B would normally be in the first and second grades. Fifty-four students participated within each unit with the sexes equally represented.

Within each unit students who had not previously meastered the reading skill to be studied were divided by sex and then blocked on the basis of previous reading skill achievement into three reading achievement groups. In the Multi-Unit framework, students are not restricted to a single classroom, but are grouped by ability and competence for the various classes so that students may have different teachers and classmates throughout the day. With this type of organization in use, students could be assigned to the three treatment groups on the basis of a stratified random assignment procedure across classrooms.

Students were then assigned to reading-skill teachers using a stratified random assignment procedure such that each teacher had one student from each of the cells in the experimental design. Teachers were not told which treatment groups students were assigned to.

Evaluation Procedures

Evaluation procedures were divided into two parts which reflected the questions asked in the study. The first general question to be answered concerned the effect of the goal-setting procedure on the attitudes and achievement levels of the students. Two attitude measures were administered to all subjects: the first was a measure of general reading attitude and the second was a measure of attitude toward the specific reading skill being studied. In each of the Unit levels both experimenter-developed and criterion-referenced achievement tests were given. The criterion-referenced tests were developed by reading and measurement experts of the Wisconsin Research and Development Center for Cognitive Learning and dealt with the specific skills studied during the experimental period.

The second of the two general questions the study seeks to answer is more theoretical in that it attempts to describe more accurately the goal-setting process. The question relates to the effects of practice in goal-setting on the number and accuracy of goals set and on the degree of confidence that subjects show in attaining them. Following the administration of the attitude and achievement measures, all students in the three treatment groups participated in an individual goal-setting conference. The results of this conference, along with teacher ratings, were used to compare the effect of the treatments on the goal-setting behavior of the groups.

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Experimental Design

The experimental design was a 3x3x2 randomized block design with three

treatments, three levels of previous achievement, and two sexes. The design was replicated at the two unit levels (B and D).

Separate multivariate analyses of variance were conducted incorporating appropriate subsets of the following dependent measures: (a) scores on the reading attitude inventory, (b) scores on the skill attitude inventory, (c) scores on the experimenter-developed achievement tests, (d) scores on the appropriate subtests of the criterion-referenced achievement test, (e) the number of goals set, (f) the accuracy of the goals set (the absolute value of the difference between the number of goals set and the number of goals achieved) and (g) the score for confidence in achieving the goals set.

Results and Discussion

For convenience in consideration of the results of the two parolled studies conducted; the treatment effect found in both units will be considered at the same time in relation to each variable.

Attitude Measures

In neither Unit D nor Unit B was there a difference in attitude as a function of treatment. No significant differences were found between the goal-setting and non-goal-setting groups or between the conference and control groups. Because of the relatively short term nature of the study however, the failure to find differences in attitude toward reading in general is not surprising; the likelihood of changing long standing attitudes in a short period of time is small. There was also no difference between treatment groups in their attitudes toward the reading skills class. On an intuitive level, one would expect the goal-setting group to haae a more positive attitude toward the class due to generally higher achievement and more individual attention. As Bayfield and Crockett (1955) and Locke (1965) have pointed out, however, attitude and

performance are not necessarily correlated. Perhaps the only possible explanation which can be proposed to explain the lack of differences in attitude toward the reading skills class is to point out that the average attitude score for all students was extremely high, thereby effectively producing a ceiling effect and eliminating any chance of discriminating among groups.

Achievement Measures

Within Unit D no significant differences were found in achievement on either the experimenter - developed achievement test or the criterior referenced test. After examining these results in Unit D, it was decided to place more emphasis during the goal setting conference on providing feedback relating to the students ability to handle the specific reading skills. With the change in emphasis, goal-setting students in Unit B showed significantly higher achievement on the criterion-referenced achievement tests and, although the differences were not statistically significant, attained a higher level of achievement on the experimenter-developed tests as well. In neither Unit were there any differences between the conference and control groups. This finding is of extreme importance because it indicates that the higher achievement of the goal-setting group can be attributed to the goal-setting procedures per se rather than to a general "conference effect."

Insert Table 1 about here

Goal-Setting Behavior

There can be little question of the effect of the goal-setting procedures on the ability of students to set more realistic goals. In both Unit D and Unit B behavior of the goal-setting group differed at the .01 level of significance from that displayed by the conference and control groups. No differences

were found in the conference versus control comparisons. Again, the differential effect found in the goal-setting versus non-goal-setting comparisons must be attributed to the goal-setting procedures employed rather than to a general "conference effect."

In both Units, the goal-setting group set fewer goals than the other groups. This is interpreted as representing a more realistic statement of goals. This type of interpretation is supported by the fact that the goal-setting groups showed smaller differences between the number of goals set and the number of goals attained. In other words, the goals were more accurate and more realistic. This seems to support the findings of Porat and Haas (1969) that more information (feedback in this case) results in more accurate levels of goal setting and decision making.

The consistency of goal-setting behavior between Units is also apparent in the confidence levels displayed by the treatment groups. In both Units, the goal-setting group had lower confidence scores than did the non-goal-setting groups. The "lower scores" are again interpreted as reflecting more realistic appraisals by the students of their chances for success. It would seem that a greater percentage of goal-setting students realize that they would probably require help in learning and mastering the reading skills and that they might not be able to achieve all of the goals which they had set.

Insert Table 2 about here

Insert Table 3 about here

The present study demonstrated that the use of an individual goal-setting conference can improve the classroom achievement of students and investigated the effects of the procedure on goal-setting behavior.

Clearly, the significant differences found between treatment groups in relation to their goal-setting behavior are attributable to the effect of the goal-setting conferences, since conferences by themselves (without goal-setting) showed no effect on goal-setting relative to the control. In neither Unit were there differences as a function of sex, previous achievement level, or sex by previous achievement level; the only differences were as a function of treatment. Goal-setting Ss on the average set fewer goals, had a smaller absolute difference between number of goals set and number of goals achieved, and had a lower confidence score in their ability to achieve the goals they had set. This last finding can be partially explained by the fact that non-goal-setting Ss tended to show extremely high confidence in their ability to attain their goals.

The findings regarding the effect of individual goal-setting conferences on achievement are less clear cut. In the first Unit studies (Unit D) no significant differences were found, while in the second Unit (Unit B), significant differences did appear. The fact that students received more feedback in relation to skill attainment in Unit B conferences may explain this difference.[1] If this is the case, implementation of the procedure with classroom teachers giving the conferences should produce larger differences in that more accurate feedback could then be provided. Another factor which might help increase the goal-setting conference effect would be daily teacher reminders in class to

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[1]However, other factors such as age, Unit level, skill studied, etc. might also be considered in accounting for the differences in Unit B. Since all of these factors were unavoidably confounded in the present study, this change cannot be attributed to a single variable.

concentrate on the goals set for the week. This was not done in this study because Ss from all treatment conditions were present in each classroom in an attempt to minimize teacher bias. It would seem that in normal classroom use that these considerations would probably combine to increase the effects found in the present study. This is an empirical question however, which should be studied before final recommendations are given regarding the goal-setting procedures.

In this study the effects of the goal-setting process on achievement, attitudes, and goal-setting behavior were examined, but no attempt was made to fully evaluate the procedure. Besides the possible teacher influences mentioned above, factors such as cost, feasibility, inservice training needed and time must be investigated.

In future studies the target population should also be varied. As Katz (1967) has pointed out, age, socio-economic status, and race affect the ability to effectively use performance feedback. Because feedback is an important part of the individual goal-setting process, these variables should be systematically investigated.

The significance of this study lies in the establishment of goal-setting procedures which affect ongoing classroom achievement and in the more precise delineation of the attributes of goal-setting per se. The attributes of goal-setting which have been studied will contribute to the general knowledge of goal-setting in both school and non-school situations. The goal-setting procedures must now be more fully evaluated in everyday classroom use, but tentatively provide the teacher with an important motivational technique to improve student achievement.

TABLE 1

Multivariate Analysis of Variance of Scores
on the Levels B and C Base Words Subtests and Level B
Compound Words Subtests of the WTRSD Battery for Unit B

Source	df	F	p <
Treatment			
Goal-Setting (G) vs. Non-Goal-Setting ($\bar{G}$)	3, 31	2.9940	.0458*
Conference (C) vs. Control ($\bar{C}$)	3, 31	2.1740	.1110
Sex	3, 31	< 1	.4533
Treatment by Sex			
G vs. $\bar{G}$	3, 31	1.0588	.3807
C vs. $\bar{C}$	3, 31	1.3561	.2744
Previous Achievement Level within Sex	12, 82	2.2758	.0151*
Treatment by Achievement within Sex			
Treatment by Achievement within Males			
G vs. $\bar{G}$	6, 62	1.2829	.2784
C vs. $\bar{C}$	6, 62	< 1	.7461
Treatment by Achievement within Females			
G vs. $\bar{G}$	6, 62	< 1	.6423
C vs. $\bar{C}$	6, 62	< 1	.6146

* Significant at the .05 level

TABLE 2

Multivariate Analysis of Variance
of Goal-Setting Behavior for Unit D

Source	df	F	p <
Treatment			
Goal-Setting (G) vs. Non-Goal-Setting ($\overline{G}$)	3, 32	7.4103	.0007**
Conference (C) vs. Control ($\overline{C}$)	3, 32	1.1668	.3377
Sex	3, 32	2.2739	.0989
Treatment by Sex			
G vs. $\overline{G}$	3, 32	< 1	.7499
C vs. $\overline{C}$	3, 32	< 1	.8542
Previous Achievement Level within Sex	12, 84.9	1.6373	.0965
Treatment by Achievement within Sex			
Treatment by Achievement within Males			
G vs. $\overline{G}$	6, 64	< 1	.6868
C vs. $\overline{C}$	6, 64	1.0569	.3977
Treatment by Achievement within Females			
G vs. $\overline{G}$	6, 64	< 1	.6184
C vs. $\overline{C}$	6, 64	1.3514	.2480

** Significant at the .01 level

TABLE 3

Multivariate Analysis of Variance
of Goal-Setting Behavior for Unit B

Source	df	F	p<
Treatment			
Goal-Setting (G) vs. Non-Goal-Setting ($\bar{G}$)	3, 31	5.9376	.0026**
Conference (C) vs. Control ($\bar{C}$)	3, 31	1.2293	.3157
Sex	3, 31	<1	.6032
Treatment by Sex			
G vs. $\underline{G}$	3, 31	<1	.5679
C vs. $\underline{C}$	c, 31	1.0688	.3766
Previous Achievement Level within Sex	12, 82	1.1016	.3702
Treatment by Achievement within Sex			
Treatment by Achievement within Males			
G vs. $\underline{G}$	6, 62	1.5107	.1896
C vs. $\underline{C}$	6, 62	<1	.9454
Treatment by Achievement within Females			
G vs. $\underline{G}$	6, 62	<1	.7485
C vs. $\underline{C}$	6, 62	1.0367	.4105

** Significant at the .01 level